

InsertionSort:

```
/* a[0] to a[n-1] is the array to sort */  
/* n is the length of the array      */
```

```
// main loop  
for ( i = n-2; i >= 0; i-- )  
{  
    save = a[i];  
  
    j = i+1;  
  
    while( j < n && a[j] < save )  
    {  
        a[j-1] = a[j];  
        j++;  
    }  
  
    a[j-1] = save;  
}
```

Quiz 8

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1. Consider the algorithm for Insertion Sort given on the opposite page. Suppose that the input to the algorithm is the array of integers given below. Show the contents of the array after two iterations of the main loop. Indicate your answer by filling in the empty array below.

Array a:

| 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|----|----|----|----|---|---|---|
| 32 | -2 | 21 | 17 | 8 | 5 | 0 |

Array a
after two
iterations:

| 0 | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| | | | | | | |

2. Consider a hashing scheme which stores integer keys into a hash table of size 7. The hash function is $h(x) = x \bmod 7$. We will use separate chaining to resolve collisions. The table below shows the result of storing **22** in the table. Show what the table looks like after **34**, **8** and **14** are inserted (in that order). Indicate your answer by drawing the items into the diagram below.

